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EXAMINER

PARSONS, CHARLES E

ART UNIT

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BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Paper No. 14

Application Number: 09/912,132
Filing Date: July 24, 2001
Appellant(s): LAN ET AL.

Russell Gross
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 12/04/2003.

(1) *Real Party in Interest*

A statement identifying the real party in interest is contained in the brief.

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(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The rejection of claims 1-12 stand or fall together as stated by the Appellant.

(8) ClaimsAppealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

6,470,051	Campisano et al	10-2002
6,442,201	Choi	8-2002
6,519,288	Vetro et al	2-2003

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-6 and 10-12 rejected under 35 U.S.C. 103(a) as being unpatentable over Choi in view of Campisano.

Claim 1, 10-12: A method for decoding a video bitstream at a first resolution, comprising the steps

of:

Producing residual error frames at a second lower resolution; (See Choi figure 5 items 52, filtered data is analogous to residual error frames)

Producing motion compensated frames at the second lower resolution; (See Choi figure 5 item 56 and 58)

Combining the residual error frames with the motion compensated frames to produce video frames; (See Choi figure 5 item 59)

Up-scaling the video frames to the first resolution. (While Choi does not teach up-scaling the video frames to the first resolution, he does teach the use of a format selecting circuit. See Choi column 9 lines lines 28-47. Furthermore, Campisano teaches that once the decoding is done, the output to the display, shown in figure 5 item 92, can be up-sampled. Therefore, it would have been obvious to one of ordinary skill in the art, to upscale to the higher resolution after decoding is done in order to get the desired picture quality.

Claim 2. The method of claim 1, wherein the producing residual error frames includes performing an 8X8 inverse discrete transform to produce pixel values. (While figure 5 item 54 shows a 4x8 IDCT he clearly teaches that the desired resolution is directly related to the size of the block. See column 2 table 1. Therefore it would have been obvious to use an 8X8 or 4X4 or 2X2 depending on the desired resolution.

Claim 3. The method of claim 2, wherein the pixel values are sampled at a predetermined rate.

(It is well known in the art that a sampling rate must be predetermined. Official notice served.)

Claim 4. The method of claim 1, wherein the producing residual error frames includes performing a 4X4 inverse discrete transform. (See claim 2 rejection)

Claim 5. The method of claim 1, wherein the producing motion compensated frames includes scaling down motion vectors by a predetermined factor to produce scaled motion vectors. (See Choi table 2 in column 2 clearly teaching that the motion vectors must be scaled accordingly.)

Claim 6. The method of claim 5, wherein motion compensation is performed based on the scaled motion vectors. See Choi table 2 in column 2.

3. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Choi and Campisano as applied to claim 1 above, and further in view of Vetro.

Claim 7. The method of claim 1, wherein the up-scaling is performed by a technique selected from a group consisting of repeating pixel values and linear interpolation.

Claim 8. The method of claim 1, wherein the up-scaling is performed in a horizontal direction.

Claim 9. The method of claim 1, wherein the up-scaling is performed in a same direction as down scaling in the residual error frames.

As for claims 7-9 Campisano clearly teaches in column 10 lines 5-20 that scaling can be done by any factor in either the horizontal and vertical direction and is done by interpolation.

While he is teaching this in the dissemination stage, Vetro teaches that up-scaling is done as an inverse to down scaling. He also teaches up-scaling in both the horizontal and vertical directions. Therefore it would have been obvious to one of ordinary skill in the art to upscale in the same manner in which the downscaling was done.

(11) Response to Argument

In response to the Appellants argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation comes from the fact that both Choi and Campisano teach a need to have scalable decoders. See column 2 lines 17-24 of Campisano as well as column 1 lines 39-60 of Choi. Clearly at the time the invention was made no standard existed for the conversion of high resolution pictures to low resolution pictures and vice versa. With this in mind it would stand to reason that if a decoder manufacturer wanted to make a decoder that would display a picture on a low-resolution as well as a high-resolution monitor, it would build that capability into it. However, since there was no standard and the TV receiver manufacturers had to create their own methods of displaying pictures, see column 1 lines 62-63 of Choi, there was no way for the decoder manufacturer to predict what resolution was available at the particular monitor that the signal was being displayed on. Furthermore, at the time the invention was made it was well known in the art that the decoding process was and still is computationally intensive. See Choi column 3 lines 17-25. As a result he further teaches, in column 3 lines 30-64 that the prior art down sampled the picture data in order to perform the decoding process with far more manageable amounts of data. Thus a person of ordinary skill in the art would have already known to down sample an input video in order to efficiently decode it. Therefore, it would have been obvious to one of ordinary skill in the art to add (not substitute

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as argued by the appellant in a previous action) an upscaling capability in order to assure that the decoder is universal to all monitors.

As for the Appellants argument that not all of the elements are claimed, the Examiner traverses this allegation. A careful review of figure 5 as well as column 7 lines 1-54 clearly shows that item 52 produces frames at a lower resolution by filtering the DCT's produced by the VLD and uses the filtered data which are analogous to residual error frames to do the motion compensation just as is claimed. It seems the examiner made a typographical error in making his initial rejection, and since this is the first time the Appellant brought up this argument it was never an issue until now. Never the less, a careful consideration of the entire reference clearly shows that all of the elements claimed are present except for the up-scaling which is done by Campisano.

For the above reasons, it is believed that the rejections should be sustained.

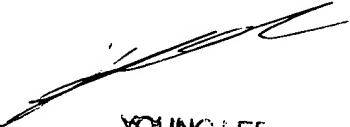
Respectfully submitted,

CEP
February 23, 2004

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